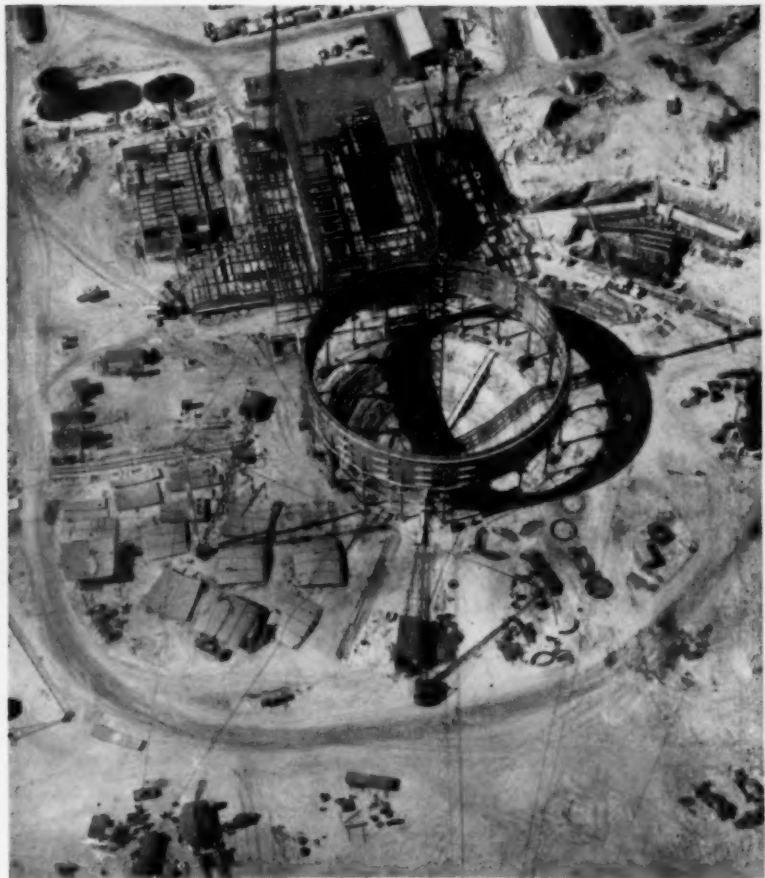


# Earth Science

Rockhounds' NATIONAL Magazine



(Joliet Herald-News Photo)

## Giant Reactor Taking Shape

(see page 6)

35¢

March-April, 1958

## HAVE YOU SEEN IT YET?

We mean the new Hillquist, the modern tumbler made especially to give you consistently better results. Those who have seen it say it is the most exciting tumbler design in years. Absolutely different; it has features you've always wanted but never expected to find.

You can see for yourself by sending a postcard for a picture and complete description.

### LAPIDARY EQUIPMENT CO., INC.

1545 West 49th St., Dept. E11

Seattle 7, Washington

## Still Searchin'

### THE OLD FASHIONED WAY?

Mineralight changes all that. Rock hounds use the modern method of fluorescence under Black Light. See it free at our Mineral Hall, Disneyland.

Read about it free by dropping a card to Department E.

Ultra-Violet Products, Inc.  
5114 Walnut Grove Avenue  
San Gabriel, California



**The Most Comprehensive Geological Supply Catalogue** ever published. Gives standard prices for all materials.

**A MUST FOR EVERY MINERAL COLLECTOR**  
and person interested in the Lapidary Art.

Price—\$1.00. This will be credited for any purchase over \$10.00.

### ECKERT MINERAL RESEARCH

110 East Main Street

-:-

Florence, Colorado

# Earth Science

\$2 a Year

Vol. 11, No. 2

Official Publication of the Midwest Federation of Mineralogical Societies.

## CONTENTS, MARCH - APRIL, 1958

EDITOR'S MEMO PAD	4
Paleontology, Studies in Foraminifera, Persons & Events, Midwest Federation Convention	
PROSPECTING FOR URANIUM IN NEW MEXICO	9
by T. O. Evans "For the benefit of the uranium prospectors who may read this, I suggest that you should carefully prospect any area where rattle weed may be present." Illustrated.	
FRESH WATER DIATOMS FOUND IN THE ATLANTIC	13
Bernard W. Powell comments on IGY discoveries of fresh- water diatom casts from great depths in mid-Atlantic. (But says this does not "prove" the existence of the so-called lost continent of Atlantis!) Illustrated.	
HUNTING PETRIFIED LOGS	15
by C. H. Scammon "We moved to this ranch in the spring of 1932 and soon began collecting petrified wood and Indian artifacts. We found ourselves almost miraculously placed in a virgin col- lecting field for both." Illustrated.	
BERYL MOUNTAIN	18
by Mrs. Julian Wetherbee Our valued contributor from Keene, New Hampshire, gives us some more fascinating New England mineralogical lore. Illustrated.	
ADVICE ON HOW TO REACH A BERYL MINE	19
by Sigrid Anderson An hilarious account written with tongue in cheek.	
CLASSIFIED ADVERTISING	21
See for yourself why many readers turn to this fast-growing market place and bargain counter first of all!	
EARTH SCIENCE VISITS SOME ROCK SHOPS	24
by Earl D. Cornwell Our advertising manager concludes his fascinating account of 17 days of touring through 10 northwestern states.	
MIDWEST CLUB NEWS	28
by Mrs. Bernice Rexin	
SOME FORTHCOMING ARTICLES: "Gem Cutting" (an illustrated series) by Dr. J. Daniel Willems; "Mudlogging" (oil explo- ration) by Cash C. Hale; "How High Can You Get", by Dr. Ben Hur Wilson; "Age of the Earth", by Earl D. Cornwell "Notes on a Prairie Naturalist", by Hiram L. Kennicott.	

PUBLISHED BI-MONTHLY by The Earth Science Publishing Company, Incorporated, Box 1357, Chicago 90, Illinois. *Business Manager*, Dr. J. D. Willems; *Treasurer*, Orval M. Fether; *Advertising Manager*, Earl D. Cornwell. • SUBSCRIPTIONS: \$2.00 per year, United States and its possessions, and Canada; elsewhere \$2.50. Advertising rates on request. Address Box 1357, Chicago 90, Illinois. • EDITED BY Ben Hur Wilson, 406 Grover St., Joliet, Illinois; *Managing Editor*, Hiram L. Kennicott; *Subscription Manager*, William H. Allaway. *Club Editor*, Mrs. Bernice Rexin; *Editorial Staff*, William A. Bingham, Frank L. Fleener, Russell P. McFall, Kirtley F. Mather, H. H. Nininger, Willard H. Parsons, Richard M. Pearl, Ken Russell, J. Daniel Willems, C. W. Wolfe, H. P. Zuidema. • EARTH SCIENCE is receptive to articles of earth science interest. Manuscripts, photographs, sketches will not be returned unless accompanied by ample first-class postage. Permission to quote or reprint articles from this magazine will be considered upon written request. Communications for editorial consideration should be sent to the *Editor in Chief*, Ben Hur Wilson, 406 Grover St., Joliet, Illinois. The Earth Science Publishing Company makes every effort to select its articles and advertising carefully in order to merit the confidence of our readers, but assumes no responsibility for the statements and opinions expressed by contributors and/or advertisers in the magazine. • CHARTER LIFE SUBSCRIBERS: John C. Bahmker, R. E. Caliga, H. D. Cohn, J. E. Farr, H. T. Perry, Theodore C. E. Reich, Sr., Chicago Rocks and Minerals Society, Earth Science Club of Northern Illinois, Marquette Geologists Association. (These subscriptions are available at \$50.00.)

Copyright 1958 by The Earth Science Publishing Company, Incorporated. All rights reserved.

## Editor's Memo Pad

**PALEONTOLOGY:** One seldom sees a general collection of minerals in which there are not at least a few fossils present; more often than not, indeed, when considered as a whole there are usually many such specimens in evidence.

A fossil may be specifically defined as mineral evidence of some form of life which has existed upon Earth during some previous geological era. It may also have even broader connotation, for we frequently speak of fossil ripple-marks, fossil mud-cracks, and even rain drops. Rather far-fetched, perhaps, but these do show evidences of various climatic phenomena, directly or indirectly affecting life upon the Earth in accordance with those natural laws which must have been operative during past ages much the same as today.

A paleontologist, then, is a person who devotes himself to systematic study and interpretation of past life on the planet as it may be revealed by fossils. This, per se, may have endless ramifications, as well as tremendous implications. We will mention only a few. It not only involves the origin or creation of life itself, but also the historical and/or physical development of genera, family and species, from the simplest living forms on down, and up through various evolutionary processes to man himself. It also reveals or indicates those inevitable trends which in the end eventually bring about the downfall of species and finally their ultimate extinction as well. This, too, in time it appears shall be the fate of the human race, and it is possible that man's own innate curiosity and superior intelligence may indeed hasten his end by his "Prying into God's Secrets" more rapidly than his moral development keeps pace.

Technically, paleontology is more directly related to and concerned with animal life of the past, while the study of ancient plant remains, which is scarcely less important than that of animals (for without plants there would be only few animals), is more properly relegated to the sub heading paleobotany. As a matter of fact, we perhaps see more plant fossils than animal in the average mineral collection.

As true mineral species many forms of fossils do have rightful and appropriate settings in any mineral collection. Fossil woods for the most part furnish excellent examples of the

quartz family minerals, silicious replacements (pseudomorphous), and in varieties of jasper, chalcedony, opal, etc., representing the plant world. On the other hand, the remarkable series of coral fossils, also usually silicious replacements, are fine representatives of animal life. These may also occur as mineral calcite (calcium carbonate) which was, indeed, their original form.

Since these jottings certainly are not intended to be a treatise, or even an article upon either fossils or paleontology, inexhaustible subjects as they are, we must now bring them to a close by directing the attention of rockhounds everywhere, while in the process of building their mineral collection, to pay close attention to any unusual fossils they may find. In so doing you may become alerted to the importance of paleontological specimens, and thereby not only be able to add greatly to the interest and value of your collection, but perhaps at the same time also to make some definite contribution to science which will carry your name on down through the pages of the literature for centuries to come.

We must here also add one further word of caution. Whenever any fossil worth saving is found, be sure to note carefully not only the exact geographic location of the 'find', but also position in the geologic strata if known, and if not known so indicate on your notes in order that this essential bit of information may be determined later by some one competent to do so. Some simple system of marking and indexing should be on immediate hand for this purpose.

Early spring months, after the winter weathering and spring rains, should be the very best time to search for fossils, as for Indian artifacts. While the early bird, they say, catches the worm, the early spring field trip often pay off best. Nothing intrigues or creates greater interest in the "young fry" than a fossil hunting trip with Dad and Mom, or teacher, after being cooped up in the school room all winter long.

Let's Go!



**STUDIES IN FORAMINIFERA:** What promises to be one of the classic paleontologic studies of all time, particularly in the field of Micropaleontology, is Bul-

letin 215, a 1957 publication of the United States National Museum, edited by Alfred R. Loeblich, Jr., ably assisted by five collaborators, Helen Tappan, J. P. Beckmann, Hans M. Bolli, Eugenia Gallitelli, and J. C. Troelsen, who have shared largely in the effort.

This volume consisting of 235 pages of carefully prepared text is superbly illustrated by 74 annotated plates at the rear of the volume, with adequate index and bibliography which complete the work, making it the final word for any similar undertaking with which your editor is familiar. A copy of this work should be a must in the library of anyone attempting the strategic correlation of core materials being studied in connection with or in the field of petroleum prospecting.

While we are not at the moment aware of how one should go about it to secure a copy of this splendid work, this information may no doubt be obtained by writing Dr. Remington Kellogg, Director of the National Museum, Washington, D. C.



#### PERSONS & EVENTS

We have had inquiries as to the identity of *Don Alfredo*, who wrote so interestingly on "Bedeviled Minerals of the Land of Enchantment" in our November-December (1957) issue. This gentleman is none other than *Alfred M. Perkins*, whose address for any who might wish to note, is 322 Linda Vista, Las Cruces, New Mexico.



An excellent biographical sketch of the late *Halver R. (Hal) Straight* of Adel, Iowa, has been prepared by Mrs. R. G. Hays, member of the Central Iowa Mineral Society, of which he was founder and life member, and published in the 1957 "Proceeding of the Iowa State Academy of Science". This sketch appearing in the necrology section of the "Proceedings" will be read with great interest by the host of friends of "Hal", who was so greatly admired and loved by so many of us, who knew him well.



*Educators at long last are waking up!* The study of Earth Science, in so far as our secondary school curricula is concerned, has in spite of its basic importance as an ideal orientation

course in the sciences been the low underdog for so long that it just isn't funny. This has been almost equally true in our college training.

As a source of fundamental knowledge for a satisfactory living experience, which is supposed to be one of the principal objectives of a free educational system, it has few if any equivalents. With this in view, we are indeed, pleased to announce that among the many cash grants being made by the Federal agency promoting summer training programs for science and mathematics teachers, a special grant of \$37,500, has been made to the University of Illinois for the training of 26 college teachers in Earth Science. We sincerely hope that sooner or later a little of this awakening will permeate down onto the secondary school level for the preparation of its teachers also.



In approaching the 79th anniversary of its founding, the United States Geological Survey announces that, with its greatly speeded up program, the completion of its *Topographic Mapping of continental United States* now looms into the foreseeable future. This is something really worth noting. During the 1957 fiscal year, 1,458 new quadrangle maps were published and 376 others were reprinted, some with important revisions. In all more than seven million copies of maps were printed in the Survey's plant during the year.



One of the finest compilations of its kind upon the classification of gem materials we have yet seen, "Gem Materials Data Book", written by Charles J. Parsons and Edward J. Soukup, both eminent authorities upon the subject of gemmology, has recently been published by *Gems and Minerals*, (P. O. Box 687, Mentone, California; price \$2.00 postpaid).

This compilation contains a comprehensive list of all gem materials, alphabetically arranged, with common name or family group; a complete set of their physical properties, by which they may be readily identified, and other pertinent information of much value and interest concerning each gem listed.

At the close one will find gem identification tables giving systematic arrangement of properties such as hard-



ness, gravity, color, streak, dispersion and many other identification assists, not to be found elsewhere in comparable satisfactory arrangement. This compilation should be found in the library of every collector and gem lover. We recommend it highly.



Writes Mrs. Bernice L. Hope, from Belmar, New Jersey: "Enclosed find \$5. for my three year subscription renewal. I certainly would not want to miss a single issue of EARTH SCIENCE magazine, which we enjoy very much."

Thank you, Mrs. Hope, and may you enjoy it for many years to come!



The spectacular aerial view on the front cover shows progress of construction on the big atomic reactor being constructed at Dresden, 15 miles southwest of Joliet, Illinois, for the production of electric power. The reactor, of the boiling water type, will be one of the first in the United States built entirely with private capital. When completed in 1960 it will be the largest so operated. The Commonwealth Edison and seven allied utility companies are co-operating on the project, which may be visited by those attending the Midwest Convention at Downers Grove, Illinois, next June.



CORRECTION: We regret that an error was made in crediting our cover drawing (gingko leaves) used in our January-February issue to William H. Allaway. It so happened that it was he who negotiated the arrangements for the drawing, which was actually made by artist Donnafred Hoff, of Downers Grove. Through no fault of "Bill's" your editor wrongfully assumed that he had made the drawings himself. We now give full credit to Donnafred, with our apologies for the oversight.



NOW THE SPOT IS MARKED: Perhaps one of the most interesting and unique spots in the entire United States from a geographic standpoint is the only one where one can virtually stand in four States at the same time. "X" now marks the spot where the corners of the states of Arizona, Colorado, New Mexico and Utah are intimately snuggle up against each other where their boundaries meet. It has recently been permanently marked by Government

Surveyors, with a cement marker two feet high, that stands on a small mesa in a lonely desert country southwest of Cortez, Colorado.



As a public service the American Geological Institute has prepared a booklet entitled "Shall I Study Geological Sciences? Single copies may be obtained free upon request. (1515 Massachusetts Avenue, N. W., Washington, D.C.). If additional copies are desired these may be had at cost of 10¢ each in quantities of five or more. Those interested should avail themselves of this generous offer.

— BEN HUR WILSON, Editor

WILMINGTON COAL FOSSILS: Publication in process!

An announcement of unusual interest to Rockhounds everywhere, and especially those belonging to the Midwest Federation, is the forthcoming publication of a new book, profusely illustrated and describing in meticulous detail those remarkable so-called "Fern Fossils" to be found in the coal measures of the strip mining area around Coal City and Wilmington, Illinois. Earlier writers spoke of them as the Mazon Creek fossils, as before the days of coal mining they were only to be found locally in the beds of the streams.

Text, drawings and pictures are by Mr. George Langford, who has worked assiduously on their collection and the compilation of source material bearing upon them over a period of more than twenty-five years. There is nothing comparable, now in print, it is said, upon this subject, and the book promises to be an invaluable addition to the literature for all who are interested in paleobotany.

Publication is being promoted and handled exclusively by a committee known as FSCONI ASSOCIATES, appointed by the Earth Science Society of Northern Illinois, and who are financing this costly project by subscriptions of \$100.00 shares, and by the sale of a limited number of first edition copies at \$20.00 per copy, to be ordered and paid for in advance. The value of these limited first edition copies, it is predicted, will advance rapidly soon after all have been sold.

Orders may send to Mr. Harry C. Witmer, 5303 Victor Street, Downers Grove, Illinois, who is chairman of the Committee on publication.

—W.H.A.

# Midwest Convention

*Downers Grove, Illinois*

*June 19-20-21, 1958*

The big news of the day is the Midwest Convention. Send in your reservations as soon as possible to the following Chairmen:

- COMMERCIAL EXHIBITS—**  
George A. Mallott,  
Rt. 2, Hinsdale, Ill.
- SOCIETY & INDIVIDUAL EXHIBITS—**  
Harry Witmer,  
5303 Victor Street,  
Downers Grove, Ill.
- JUNIOR EXHIBITS—**  
Mark J. Melancon,  
1006 S. Cuyler Avenue,  
Oak Park, Ill.
- GENERAL CHAIRMAN—**  
Verne I. Montgomery,  
1115 Prairie Avenue,  
Downers, Grove, Ill.
- PRESIDENT (for general information)**  
Howard Knight,  
267 Bertram Rd.,  
Riverside, Ill.

## DIVISION CHAIRMEN

- AUCTION CHAIRMEN—**  
Mr. and Mrs. Carl Lerstrom  
5243 Washington St.,  
Downers Grove, Ill.
- AWARD CHAIRMEN—**  
Mr. and Mrs. O. M. Fether  
818 Birch St.,  
Downers Grove, Ill.
- BANQUET CHAIRMAN—**  
Mrs. Walter Bonow  
246 Scottswood Rd.,  
Riverside, Ill.
- BRAIDWOOD FOSSILS  
EXHIBIT CHAIRMEN—**  
Mr. and Mrs. Wm. D. Kelly  
4613 Lawn Ave.,  
Western Springs, Ill.
- COMMERCIAL EXHIBIT CHAIRMEN—**  
Mr. and Mrs. George Malott  
35th Near Cass,  
Hinsdale, Ill.
- DECORATING CHAIRMEN—**  
Mr. and Mrs. Ben A. Benson  
4132 Highland Ave.,  
Downers Grove, Ill.
- EDITORS' BREAKFAST CHAIRMEN—**  
Mr. and Mrs. George L. Darrow  
825 Elm St.,  
Western Springs, Ill.
- ESCONI EXHIBIT CHAIRMEN—**  
Mr. and Mrs. Jos. S. Jelinek  
4811 Forest Ave.,  
Downers Grove, Ill.

## EXHIBITION LAYOUT CHAIRMAN—

Mr. H. L. McCleery  
4821 Saratoga Ave.,  
Downers Grove, Ill.

## FIELD TRIP CHAIRMEN—

Mr. and Mrs. J. G. Schnislein  
5905 Woodward,  
Downers Grove, Ill.

## HOSPITALITY CHAIRMAN—

Mrs. Howard Knight  
267 Bartram Rd.,  
Riverside, Ill.

## JUDGING CHAIRMEN—

Mr. and Mrs. John Ade  
315 Arboretum Rd.,  
Glen Ellyn, Ill.

NOTE: All Societies will be circularized with a complete list of available motels. Others may write to the SHELTER CHAIRMEN, Mr. and Mrs. Thomas Wheatley, 417 S. Sleight St., Naperville, Illinois, for a complete list of lodging possibilities.

## INDEX TO ADVERTISERS

A. G. & M. S. Association	23
Alaska Lapidary Service	23
Allen Lapidary Equipment	8
Classified Advertising	21-22-23
Eckert Mineral Research	2
Gems & Minerals	31
Geode Industries	31
Hubert Rock Shop	31
Don L. Jackson	27
Ken Kyte	31
Lapidary Equipment Co.	2
Lost Cabin Trading Post	23
Midwest Convention, 1958	32
Mineral Science Institute	29
Minerals Unlimited	23
Northwest Mineral News	25
Office Specialties	31
Paradise Gems	25
Prospectors Shop	25
Riley Rock Shop	23
Roberts Rock Shop	23
Rocks and Minerals	23
Searles Valley Rock Shop	29
Jack V. Schuller	27
Springer	29
Ultra-Violet Products	2
Victor Agate Shop	30
Ward's Natural History Est.	8
White Mt. Mineral Shop	20
Willems, Dr. J. Daniel	27
Williams, Scott J.	31

## America's Oldest Geological Supply House Offers:

An extensive line of mineral, rock, and fossil collections.

Mineral specimens for the beginner and the discriminating collector.

Supplies and equipment for the field or laboratory.

Ward's will be glad to purchase rare and common minerals, crystals and fossils. Please describe offerings in full and state price.

Catalog and price lists:

Ward's Geology Catalog No. 563.....\$1.00

Ward's Mineral Specimen Catalog, with listings of popular collections, equipment, books ..... Free

Geology Newsletter. Current listings of recent acquisitions.....Free

## Ward's Natural Science Establishment, Inc.

P.O. BOX NO. 24, BEECHWOOD STATION, 3000 EAST ROAD,  
ROCHESTER 9, N. Y.

### EQUIPMENT

4" Allen Junior Gem Cutter—complete combination unit .....	\$49.50
6" Allen Combination Unit with 8" saw and blade .....	98.00
4" Allen Faceteer's saw with thin copper blade .....	24.00
4" Allen Faceteer's saw with standard 4" blade .....	25.00
Allen DeLux Facet Head .....	78.50

### BOOKS

The Art of Gem Cutting — by Dake .....	2.00
Getting Acquainted with Minerals — by English .....	5.00
Jewelry and Enameling — by Greta Pack .....	4.00
Uranium Prospector's Handbook — by Peck .....	1.00
Uranium—Where It Is and How to Find It — by Proctor .....	2.50

### TOOLS

Jeweler's Needle Files, set of 6 assorted .....	2.50
Jeweler's Needle Files, set of 12 assorted .....	3.95
4½" Flat Nose Pliers .....	1.50
4½" Chain Nose Pliers .....	1.50
4½" Round Nose Pliers .....	1.50

### JEWELRY FINDINGS

No. 8 Sterling Silver Baroque Caps .....	1 doz. ...	1.50
No. 7 Sterling Silver Baroque Caps .....	1 doz. ...	1.10
18" Sterling Silver Neckchain with Clasp .....		.40
No. 304/13 Gold Plated Cuff Link Backs for cementing .....	12 prs	2.65
Tie Tacks—Gold plated—with pad for cementing .....	12 for	2.00

Add 10% Excise Tax to Findings.

Add 3% sales tax if you live in California.

Add 4% Sales Tax if you live in Los Angeles. All prices F.O.B. Los Angeles.

We are a member of the Gems & Minerals Association — Write for catalogue Price .25, Dept. E.

### ALLEN LAPIDARY EQUIPMENT COMPANY

3632 W. Slauson Avenue Phone Ax-2-6206 Los Angeles 42, California



# Earth Science

MARCH-APRIL, 1958

Vol. 11, No. 2

## Prospecting For Uranium In New Mexico

by T. O. EVANS

THE FIRST MAJOR DISCOVERY of uranium ore in the Grants area was made by Paddy Martinez, a Navajo Indian, in the spring of 1950. This discovery was made in the Todilto limestone and the mineral later classified as tyuyamunite, a calcium uranium vanadate.

The initial discovery by Paddy Martinez was made near the base of Haystack Butte upon land owned by a subsidiary of the Santa Fe Railroad.

Paddy later became associated with a group of white men who requested a lease from the Santa Fe to mine the ore. This request was referred to me, and it became my duty to make an examination of the property, which I proceeded to do on September 20, 1950.

Our investigation revealed seven disconnected mineralized outcroppings of tyuyamunite in the Todilto limestone of Jurassic age, which overlies the Entrada and underlies the Morrison formation.

The mineralized outcroppings were scattered over a distance of about 18 miles. Samples were cut and the assays indicated the grade of ore to be between 10 and 40 one-hundredths of one percent U<sub>3</sub>O<sub>8</sub>.

Following our examination, we concluded that the district was an interesting one, because of the widespread occurrences, and believing that additional ore would be found, we recommended to the management of the Santa Fe that a comprehensive program of exploratory drilling was justified in order to more completely



T. O. EVANS

evaluate the possibilities of discovering additional ore.

Most of you will remember that there were only a few hundred thousand ton deposits in our country prior to 1950, and it was the opinion of Mr. F. G. Gurley, president of the Santa Fe Railroad, that possibly our company could render a valuable service by assisting the Atomic Energy Commission in their search for additional uranium ore reserves.

That statement explains the reason why the Santa Fe concluded to

undertake the exploration and development of uranium occurrences on its railroad lands.

Within a short time prospecting was extended completely along the Jurassic outcrop escarpment from Grants to Gallup. Prospecting methods used included airborne scintillometer equipment, rim walking; and where favorable anomalous counts recorded, shallow wagon drilling was done directly behind the outcrops.

During the early stages of prospecting on the Jurassic escarpment, all of the discoveries were made in the Todilto limestone between Grants and Haystack Butte, which is about 18 miles to the west, and only a small part of this entire interval was favorable.

Our intensive program of drilling revealed that the deposits were confined to scattered lenses of mineralized ground containing from five thousand to one hundred and fifty thousand tons of ore, with barren areas intervening.

As mentioned earlier, wagon drills were used in the shallow overburden areas to obtain cuttings of the limestone for assay determination. Samples were taken every two feet of depth. Hollow 1-1/8 inch dia. drill steel, equipped with 2 inch carbide bits, was used, and as drilling progressed an occasional stream of compressed air was blown down through the hollow steel to eject the rock cuttings upwards out of the drill hole into an annular basin, around which a canvas bag was securely held by a steel band.

When exactly two feet of drilling was completed, the canvas bag containing the sample was emptied into a Jones splitter, and the split sample weighing about 5 pounds was sacked and labeled for delivery to our laboratory for assay determination.

The Todilto limestone has a regional dip of about five degrees to the north and in most instances the over-

lying terrain ascends in the same direction, consequently deeper drilling became necessary to explore the limestone, as the program continued north of the escarpment.

Incidentally, wagon drill exploration is effective and inexpensive up to about 50 feet of drilling depth. Beyond that depth, rotary drilling is faster, cheaper, and somewhat more effective.

Almost three years elapsed between the commencement of our exploratory drilling program and the first shipment of limestone ores to the Anaconda mill.

Practically all of this time was spent in pilot plant amenability tests to determine a satisfactory process to recover the uranium from the limestone gangue ores, and in the construction of the carbonate leach plant by the Anaconda Company.

By a contractual arrangement between the Anaconda Company and the Haystack Mountain Development Company (a wholly owned subsidiary of the Santa Fe), we are obliged to ship all of our limestone ore to the Anaconda mill at Bluewater, which is approximately 9 miles from the deposit.

The carbonate leach plant just mentioned has a daily milling capacity of 500 tons.

All of our limestone mining is done in open pits after removal of about 6 or 7 feet of overburden by bulldozers. The mineralized limestone averages about five feet in thickness. Drilling is done by wagon drills, and after blasting, the ore is loaded into trucks by a 3/4-yard Link Belt power shovel. Two Allis-Chalmers HD-5 end loaders are used for ore blending.

The first discovery of uranium mineralization in the Brushy Basin member of the Morrison formation in the Grants District was made by a Santa Fe mining engineer on January 4, 1951.



Loading Limestone Ore at Section 23 Open Pit Operation (*Santa Fe photo*)

This occurrence now known as the Poison Canyon Mine was found during a visit to the area to determine the reason for sheep dying there.

It was reported that a band of 300 sheep had died when the sheep herder camped there overnight. An autopsy performed on several dead sheep revealed that their lungs had turned black and were swollen to such an extent that the sheep had apparently died from suffocation.

This was an interesting assignment for the mining engineer, who had carried his scintillometer along to determine if it were radon gas that caused the sheep to die from swollen lungs. During the course of this study, he picked up some anomalies on the hillside that sent the needle of the scintillometer to the top peg.

It was many months later before the actual reason for the sheep dying

in Poison Canyon was determined. The credit for learning the truth should be given to Dr. Helen Cannon, geobotanical expert for the U. S. Geological Survey.

Dr. Cannon visited Poison Canyon at my invitation and immediately identified a plant which grew in the canyon as *Astragalus Pattersonia*. This plant requires selenium to exist, and selenium is often associated with uranium. The sheep ate the *astragalus*, commonly referred to as rattle weed, and died from selenium poisoning. Larger animals are often able to survive the effects of selenium poisoning, but the smaller animals usually die.

For the benefit of the uranium prospectors who may read this, I suggest that you should carefully prospect any area where rattle weed may be present.



Loading Sandrock Ore at Poison Canyon Mine (*Santa Fe photo*)

It can easily be identified in the spring by its deep green color and its dead cat odor, which is apparent when the leaves are crushed between the fingers. In the fall and winter, after the plant has dried out, it has small pods—somewhat similar to a dried pea, which rattle when shaken. It grows to a height somewhere between a foot and three feet. The height and spread of the plant depend upon the amount of selenium present in the soil.

After an intensive exploration program in the Poison Canyon area, it was concluded that strip mining operations would produce more ore at less cost than to attempt to mine it by conventional underground mining methods. Consequently, practically all of the tonnage produced at Poison Canyon has been recovered

from stripping operations.

The average amount of overburden removed was 30 feet in thickness, and the thickness of ore averaged six feet.

As the thickness of overburden increased upwards, to as much as 150 feet, we decided to adopt underground mining methods, and we are presently engaged in driving an adit in an easterly direction from the bottom of the original pit and we are recovering a fair grade of ore from three working faces connected with that adit.

Jackleg drills are used for drilling, and an Allis-Chalmers HD-5 end-loader and Ingersoll Rand 10HP slusher are used for loading the ore into 3-four ton shuttle cars which convey the ore up a fifteen percent in-

clined rock cut to the blending piles. Three Joy 5-horse power blowers furnish about 25,000 cu. ft. of air per minute for ventilation.

Six other companies are operating in the vicinity of the Haystack and Poison Canyon Mines. They are the Holly Uranium Corporation, Mid Continent Uranium, Rim Rock Mining Company, Daleo Corporation, Four Corners Exploration Company and the Westvaco Chemical Company.

Sandrock ore produced at our Poison Canyon Mine is shipped by truck to the Shiprock Mill of the Kerr-McGee Oil Industries, Inc. Prior to this arrangement with the latter company, ore shipments were being made to the Bluewater Receiving Station operated by the Anaconda Com-

(To be continued)

pany on behalf of the Atomic Energy Commission.

About three miles to the east of Poison Canyon, the Calumet & Hecla Corporation have recently let a contract to sink a 1200 foot inclined shaft on a gradient of 10% to tap a rather extensive orebody in the Westwater sandstone.

All of the properties I have mentioned are generally referred to as being in the Haystack Mountain or Poison Canyon areas.

(Presented at the joint meeting of the American Institute of Mining Engineers and students majoring in Earth Sciences at Occidental College, Los Angeles, California, November 20, 1957.)

## Fresh-Water Diatoms Found In the Atlantic

BERNARD W. POWELL, author of the excellent article on diatoms published recently in *EARTH SCIENCE*, calls our attention to a reference published in the November 22 issue of *Science* concerning core-sampling of sediments in the bottom of the Atlantic Ocean, which have brought forth some surprising discoveries related to diatoms. This work being done as a part of the endeavors of the IGY has produced samples of fresh-water diatoms from the great depths of the ocean, and in connection with it are some unusual and perhaps controversial theories as to how these fossil diatoms came to be there. Says Mr. Powell:

"In substance, here is what has been found: oceanographic research vessels taking core samples in mid-Atlantic in the equatorial regions, have recently found numerous fresh-water diatom casts in these sediments. The fossiliferous layers consist wholly of fresh-water forms sandwiched in between the expected marine forms.

"There are roughly three theories that have been put forward to account for this paradox, and of these

three, one (Malaise's theory) is the most dramatic, for he sees in these fresh-water forms the first genuine evidence for the so-called lost continent of Atlantis! That is, it is assumed that the fresh-water diatom fossil layer represents the bottom of a lake or swamp which once stood above sea level somewhere on the sunken continent of Atlantis. By chance, the core-borer of the research vessel just happened to hit the spot and so bring up a sample of this former fresh-water lake deposit from the bottom of the ocean. This is extremely interesting—but of course, does not 'prove' the existence of Atlantis. Malaise's theory is more fully set forth in his work 'Sjunket land i Atlanten', (Ymer, Stockholm, 1956), p. 121. Unfortunately, I don't believe there has been an English translation out of the Swedish.

"The other two theories are respectively, the Potamic theory, and the aeolin theory. The former holds that the diatoms originated long ago in African lakes, swamps and rivers and were ultimately drifted and transported by currents, et al, to the present off-shore locality. The latter



theory holds for the same origin in the African mainland, but believes that periodic dessication of swamps and lakes let the trade winds pick up the diatomaceous dust and transport it out to sea.

"The work is still progressing,

and no one theory can be taken as final. Future investigations may decide which one is true. I thought your readers might be interested in this, particularly if my series helped make them diatom-conscious anyhow".

—B.H.W.



"Diatoms in Dark Field" (photo by William Angus, Jr., from the Chicago International Nature Photography Exhibition).

## Hunting Petrified Logs

by C. H. SCAMMON

PETRIFIED WOOD HUNTING is a wonderful hobby. Back in 1923 my doctor told me that I had less than two weeks to live on account of a bad heart condition, and I am now past 60; and only last week I put a section of a petrified oak log on a pack board and carried it nearly a quarter of a mile to my truck, and when I got it home I found that it weighed 118 lbs.; doctors can sometimes be mistaken.

I put in several years as a logger and that experience has surely helped me a lot in handling petrified logs, sometimes found where they cannot be gotten at with a truck and must be handled by using cables and pulleys. On my second tallest log, which is 8 feet long, I had to use 3 single loops to pull it out of the hole it was in.

Picture 3 shows the tallest log I now have on display, although I do have one that is 11 feet long, which we have not stood up on end yet. This tall log, also shown as 7th from the left in picture 4 and 2-3-4-6 to its left, are 28 feet of a spruce tree (petrified), not all of which has yet been dug out. In the deepest part of the trench it was over 5 feet down to the top of the log, which was embedded in solid pillows basalt.

When removing the last section from the trench, I had to dig down to get a hydraulic jack under the end of it, and while so doing I struck another smaller log underneath and slightly quartering. It was 8 feet long and 6 inches in diameter at the top, and 16 inches in diameter at its base. In removing it, it came out in nice round sections from 4 inches to 4 feet long. This was lucky, as a single trench here served to get both logs a part of the way.

When hauling these logs out and to our display I use a Dodge 6x6 truck, shown in picture 5, where I am shown unloading a log which had an estimated weight of between 2½ and 3 tons. It is one of the very few I have found in the "Vantage Interbed". Most of the others have been found in the first lava flow of pillows basalt above the interbed.

I am working now on a small oak log that is embedded in "pillows basalt" that is partly in round balls from 2 to 3 feet in diameter with a thin clay coating. These balls are certainly a tough nut to crack, but they do always have a weak spot. It takes a sharp pick every day. Luckily I can sharpen my own. Some of this basalt is very hard and brittle, and occasionally I find some that is rather tough and seems to be solidified clay.

In this country the flows are badly faulted, which makes it doubly hard to follow the flows which contain the petrified wood. I regret that I have no geological education, which would aid me, since I am constantly in contact with so many different kinds of rocks in this region of intense vulcanism. I do have a diamond saw, however, but no polishing equipment; yet during the last two winters I have taken up the study of wood identification, and have made thin sections for microscopic study down to .027 of an inch in thickness. I have made round sections my specialty for display, and have them from limb size up to 3 feet in diameter. Oak, spruce, and elm have been most plentiful, but I have found cypress, hickory, walnut, gum, maple, and some others of which I am not so sure as to identification.

We moved to this ranch in the spring of 1932 and soon began collect-

ing petrified wood and Indian artifacts. We found ourselves almost miraculously placed in a virgin collecting field for both, and have very happily taken full advantage of the situation. Of the latter (Indian artifacts) we have collected literally hundreds of very choice specimens, the three most outstanding being the salmon spear with 3 bone points which is shown in picture 1, with arrow heads; a 21 inch long pestle or Salmon Packer, and a Doll Papoose Board (or Indian name "Takish"). Picture 2 shows our heavier Pestles and Hammer stones, and their chief collector and arranger.

We live at the mouth of Skookum Chuck Canyon on the bank of the Columbia River, 6 air miles north of Vantage, Washington, which is on U. S. highway 10. We are about 2 miles from Vista Point on highway 10, overlooking the Columbia River, and are upstream and across the river at the mouth of a canyon that has a group of large black walnut trees. Our display of petrified logs, (picture 4) can be seen from this point with binoculars.

We would be greatly pleased to receive visits from members of the rockhound fraternity, although we should be notified 2 or 3 weeks in advance, as we receive mail very infrequently. We live 2 or 3 miles beyond the north boundary of the Ginkgo State Park, and the road in here goes through the park and the entrance gate is kept locked. The present superintendent is very cooperative, and he will allow you to go through and direct you to our abode. You will be very welcome. Pictures 1-2 and 3 are by Cecil M. Quillette, Box 1052, Yakima, Washington, and No. 4 and 5 are taken by yours truly.

Picture No. 3

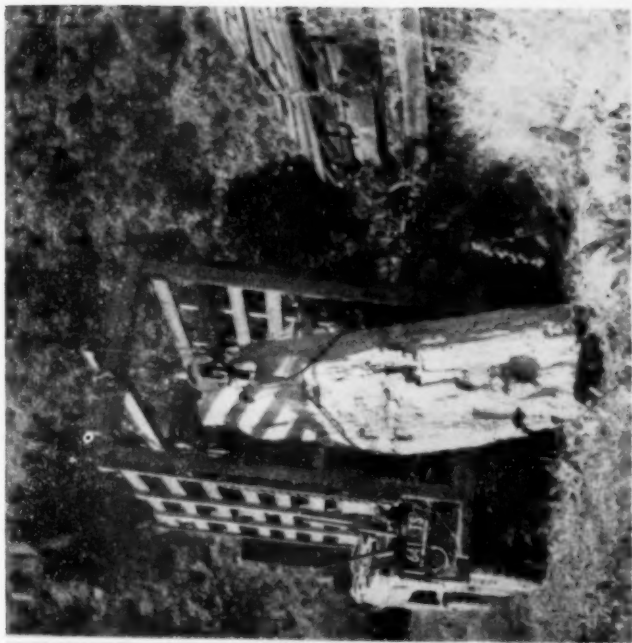


Picture No. 1

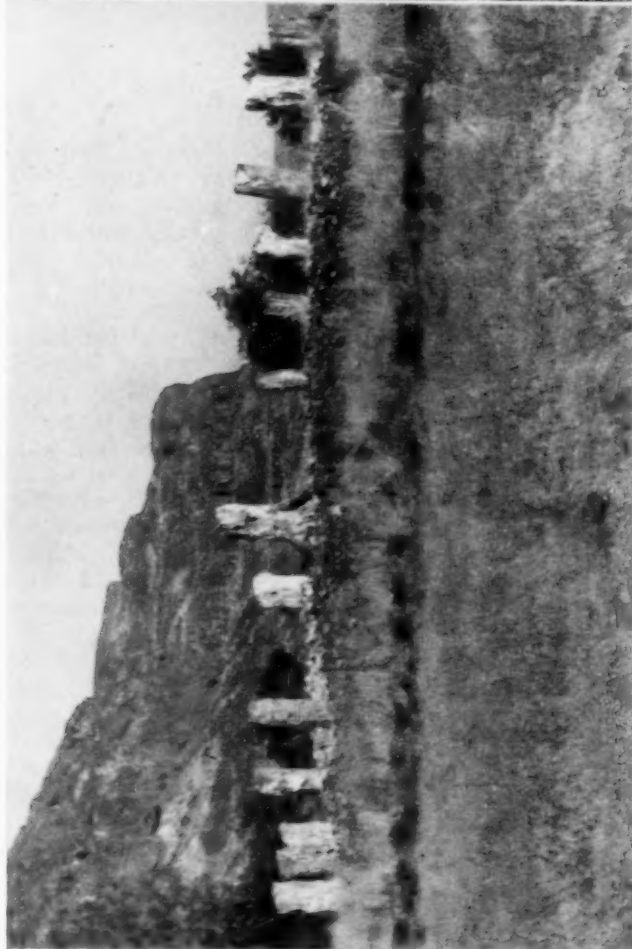


Picture No. 2





Picture No. 5



Picture No. 4

## Beryl Mountain

by MRS. JULIAN WETHERBEE

BERYL MOUNTAIN is situated in the town of Acworth, near the village of South Acworth, New Hampshire. This mountain is only 1165 feet in elevation and is 336 feet higher than the village of South Acworth.

A Brookline, Massachusetts, man, Mr. Thomas E. Donovan, owned this property at the time Col. Charles A. Lindbergh flew on his solo flight to Europe.

It was reported Lindbergh brought back a secret report from Germany that beryllium was largely responsible for the Nazi superiority in the airplane field, and that the alloys of beryllium would be invaluable.

The price of beryllium doubled and tripled in a short time. German and English agents came and offered huge sums to Mr. Donovan for his rights to Beryl Mountain. Mr. Donovan refused all offers, saying, "I wouldn't sell to any foreign government".

Beryllium ore was selling at that time at \$8.75 a ton. Later the price jumped to \$70. a ton. Now, today, in 1957 our government pays about \$600. a ton for beryl.

During the second world war the Bureau of Mines drove a tunnel about 80 feet into the base of the hill, expecting to cross out the downward extension of the beryl. As no beryl was found they abandoned the project.

It was after this that Mr. Ashley, of West Rumney, New Hampshire, took over the mine and the Ashley Mining Company started to remove the beryl. They worked for about three years. At that time beryl was selling for less than half the price it sells for today.

Beryl Mountain had the largest concentration of beryl ever found in our country.

I have visited the place many times since from before 1925 till this year, and over the years a great change has taken place. Now there are only a few beryl crystals showing in the walls. At one time on one of my visits there were beryls as large as a man's body, crossing each other in all directions and of many colors.

Not much gemmy beryl has been found here, but it comes in all shades of blue, greenish and golden. Some crystals have been found with one end one color changing to another color. Also bertrandite has been found and crystals of part quartz and part beryl. Some other minerals are also found, columbite in small amounts, wardite and mica.

While the Ashley Mining Company was working the mine they saved the mica, also sold some of the white grainy quartz, which looks like sugar.

Back in the early 1880's one of our Keene Mineral Club members, Mr. Walter Winch, who as a boy lived not many miles from Beryl Mountain, told me, one day he was at the Cold River railroad station (near Bellow Falls, Vermont) and saw a huge block of pink quartz loaded on a freight train. This large piece of pink quartz came from Beryl Mountain. It was being taken to Concord, Massachusetts, as a tombstone for Ralph Waldo Emerson's grave.

Today if you visit the Sleepy Hollow Cemetery in Concord you first pass the graves of other notables. Then after you pass Thoreau's grave, over near the trees, on a ridge is a fenced in square with this huge piece of pink quartz marking the grave of Emerson. Emerson was a great lover of nature as well as a poet, a teacher and a preacher. What more fitting stone to mark his grave than some-



thing that was a natural product of nature?

No doubt Emerson had visited Beryl Mountain in his many journeys into New Hampshire and had seen the

mass of pink quartz beside the beryl.

So a small part of Beryl Mountain rests on a ridge in Concord, marking the grave of a man interested in all nature.



Opening to Beryl Mine, Close Up and Afar

---

## Advice On How To Reach A Beryl Mine

by SIGRID ANDERSON

FOLLOW ROUTE 25 from Plymouth, New Hampshire, until you come to a detour sign, don't detour, just keep on going. The road is somewhat rough but that's alright, it will get worse! Soon you will see a sign with small letters, "impassable road" and it will be very rutted and bumpy, zigzagging for 7 miles, but you can shorten it considerably by speeding. Then another sign confronts you: "No trespassing", just ignore it, keep going. After awhile you will pass a large sign: "Private Property" and as there are no speed limit signs posted, you naturally step on it. A closed gate across the road might give you a little consternation, but if you can stop in time, you will open it and pass through.

The road from now on is much improved and you will enjoy our famous scenery as you leisurely travel along, until a heavy chain stretched across the road stops you. It is hitched together with an enormous padlock. A large sign is placed in the middle of the road: "Government Property, Keep Out". But don't let that bother you, don't try to break the lock, hacksaw the chain instead, as the lock belongs to the Government. Don't forget to bring your hacksaw! Now you can proceed again until another sign confronts you: "Positively No Admittance", but by this time mere signs leave you unimpressed and you drive blithely along in high spirits until a huge sign startles you and makes you stop: "Explo-

sives! survivors to be prosecuted to the full extent of the law." As your wavering gaze beholds in the distance what you believe is a mirage, but really is the so much coveted Beryl mine, you manfully set course on the mine and step on the gas. After about a quarter of a mile your car skids to a stop outside the muddy mine entrance. A toolshed to the left will furnish you with all the tools needed. The shed is locked, so you hesitate for a moment, but the door can be easily pried open with a pinchbar. Just don't forget to bring one! Inside you will choose what tools you think necessary and in rapture you gaze on a sack, standing in a corner, full to the brim with glittering Beryl; so you make a mental note to fill your pockets, when you return the tools. You cautiously enter the mine and the breathtaking sight of a Beryl, as huge as a room, looms in front of your astonished eyes; the only drawback is that the Government has it wired with dynamite planted all around it, ready to go off at the slightest touch. That's nothing, when you at last have reached your goal, so go to work with the borrowed hammer and chisel, but be sure you don't strike anywhere near, where it is wired.

As you finally get rewarded beyond your fondest dreams by a piece of sparkling Beryl tumbling to your feet, and you stoop to pick it up, an ominous shadow darkens the mine entrance and an unpleasant voice snarls: "What'che doing?". Pass it off nonchalantly with a pleasant smile and tell him that you would like to buy some Beryl from him for your collection. "Can't sell it, aint mine, sold it to the Government. You be from New Jersey?" Be sure to convince him, you are not from New Jersey, never even heard of New Jersey, (this is important, as the man is strongly New Jersey—antagonistic). Pacified, he relates to you, how in the last few years he had been robbed by New Jersey mineral collectors of \$800. worth of Beryl. By this time he will get colloquial and confide that he sometimes Gives his

Friends pieces of his precious Beryl! So you will start bragging about how many of your friends own mines, especially Beryl mines, in fact, all mine-owners are your friends. Then he turns his back on you, and leads the way out of the mine to the toolshed. You return the tools you borrowed, with one eye on the sack of Beryls. With joy in your heart you watch him drag the sack over to your car, dip his hand in the sack, pull out a small piece of Beryl and, to your chagrin, hand it to you. Deftly lifting the heavy sack, he throws it into the back of his Pick-up and drives away, leaving you standing there with a sinking heart in the drizzling rain. Forgot to tell you, it is only on rainy days that the miners are not working at the mines. Better luck next time!

#### SANTAFEITE

Dr. Ming-Shan Sun, mineralogist for the New Mexico Bureau of Mines, has identified a new mineral, found in 1951 in an out-cropping of limestone rock near Haystack Mountain, where uranium-bearing ores have also been discovered. Because the mineral was found on land owned by a Santa Fe R. R. subsidiary, it has been named "santafeite". It's easy to imagine scientists a hundred years from now wondering where that name came from. T. O. Evans, Santa Fe mining engineer, says this is the first instance in which a new mineral has been named for a railroad company.

#### WORLD FAMOUS URANIUM SPECIMENS

The last from Ruggie's Mine, Grafton, N. H. Uraninite crystals with Gummite, Autunite, Uranophane, etc. Brilliantly fluorescent; highest radio activity. Specimens 1½x1½", \$3.00; 2x2", \$5.00. Choice MUSEUM PIECES, 3x4x6" \$35.00; 4x5x9", \$90.00; 5x7x16", \$275.00.

#### MONEY BACK GUARANTEE

\$1.00 brings sample and our catalogue, featuring over 500 selected specimens from all parts of the world.



#### WHITE MOUNTAIN MINERAL SHOP

Campton, New Hampshire

## CLASSIFIED ADVERTISING

Rate: Eight Cents per word, per issue. Minimum \$2.00, payable in advance. No proofs or copies for checking are furnished. Introductory words will appear in CAPITALS. When additional capitalization is required, each such word counts as two words. No charge for name and address.

"HERKIMER DIAMONDS". The very finest, clearest, flawless, perfect double terminated quartz crystals; five for \$1.10, postpaid. MINERALS & GEMS, Box 8072, Albany, New York.

BRAZILIAN AMETHYST. Clear, medium, deep purple stones for faceting and cabochons. Four ounce parcel, \$5.50; guaranteed and postpaid. MINERALS & GEMS, Box 8072, Albany, New York.

NATURALISTS CATALOG, 25c. Popular SL 2537 short-wave Mineralight, \$39.50. Blak-Ray Master Science Lab, \$14.95. Professional Geiger Counter, \$149.50. Lucky Strike, \$99.50. Testa Model A Wide-Field Microscope, 15 to 75 x, \$54.85. QUIVIRA SPECIALTIES CO., 4204 West 21st Street, Topeka 41, Kansas.

FIFTY ANCIENT ARROWHEADS, \$10.00, (plus Spearhead, \$11.00). Large New Book-Relic Catalog, \$1.00. Missouri Stone Celts; large, \$4.00, small \$2.50. California Mound Shell Ornaments, \$2. TILTON INDIAN RELICS, 1615 West 21st Street, Topeka 41, Kansas.

GENUINE RICOLITE FROM WORLD'S ONLY KNOWN DEPOSIT. Polishes beautifully, easily. Can be carved with ordinary files or cut with abrasive blade on table saw. Apple green to dark green translucent variety in small pieces only. Jadelike in appearance. The banded green in any shade, with contrasting bands, can be had in any reasonable size. Your friends will be amazed at the beautiful jewelry, carvings, spheres, desk sets, and specimens you can make of this marvelous material. Order the kind you wish or a surprising assortment. Eight pounds for \$5.00, plus postage. RICOLITE GEM CO., Las Cruces, N. M., Box 886.

TEN DIFFERENT DEVONIAN FOSSILS from the famous Silica Shale of Ohio, with identification and background, \$1.50, postpaid. Rare Devonian trilobites, \$1.00 and up. Send stamps for price list. DON'S FOSSIL SHOP, Box 181, Ottawa Lake, Michigan.

PETRIFIED WOOD AND MONTANA AGATE. Wood shows good grain, 40c lb. Agate, 50c lb. and up. Free tumbled stone with each order. Please include postage. GENE'S GEMS, Roy, Montana.

FOSSILS FROM U.S., also British Ammonites, Pelecypods, Plants, Graptolites, and Brachiopods. Classified. R. BOWMAN, 1030 Ohio Avenue, Lemoyne, Penn.

STAR SAPPHIRES. Fine gem quality, rough stones of large size. Every stone selected for color and strong silk. Fifty carat parcel \$8.00; guaranteed and postpaid. MINERALS & GEMS, Box 8072, Albany, New York.

FLUORESCENT MINERALS FROM FRANKLIN, N. J. 12 large specimens of Willemite and Calcite (approx. 45 sq. in. of fluorescent area and 4½ lbs. total weight). Selected for their Brilliance under short wave; also includes Franklinitite, \$3.75. Set of 12 smaller specimens, \$1.50. Both attractively set in Styrofoam in Display containers and postpaid in U. S. STEVE STEVENSON, R.D. 1, Port Jervis, N. Y.

MAGIC WORDS! NUGGETS: ALASKA! I wish you might read the notes of appreciation from those who have bought selected Gold and Platinum Nuggets. One Gold Nugget from each of three widely separated localities in Alaska. Three specimens, total weight, twenty-four grains Troy, \$3.00. Each identified as to source and weight given. Platinum from S. W. Alaska, thirty-three cents per grain. Your choice of weight, six to forty grains, smooth or rough. Large Gold nuggets, twelve and one-half cents per grain, plus Registration Fee. FRANK H. WASKEY, Oakville, Washington.

OUT OF THIS WORLD — Fluorescing woods that excite wonder. New, Different, and Spectacular. Two to four glittering colors each; many kinds; all natural and genuine. Cut into many designs and expertly sanded. Under long wave, will out-class most minerals because of their various color beauty. Six different kinds; twelve specimens, \$4.25. Four kinds; eight specimens, \$3.50. All identified and postpaid in U.S. Galaxy of color under black light. I sell for \$3.25, prepaid. STOP, bring your lamp, make your own selections. HARVEY R. SHULL, 1516 South Market, Oskaloosa, Iowa.

**NORTHERN CALIFORNIA OBSIDIAN**—Iridescent or Rainbow from a new field. The most beautiful obsidian ever found; a profusion of lovely colors, \$1.00 per lb. **OPALIZED LIMB SECTIONS**—from Nevada. Very colorful gem quality sections that we dig from several feet underground, \$2.00 per lb. Nearly perfect small limb and twig specimens from \$1.00 to \$10.00 each. Satisfaction guaranteed. Please include postage. **PARADISE GEMS**, 6676 Paragalia Way, Paradise, California.

**GREEN GARNETS FROM MEXICO.**

While they last, a full pound of green garnet crystal specimens from Mexico for \$3.00, pp. **R. BERRY**, 5040 Corby Street, Omaha 4, Nebraska.

**FREE TO EACH PERSON** requesting our approval assortment of cameos and carved floral cabachons, we will send a flawless faceted smoky quartz stone. Stones are sent in a returnable mailing box. Send postcard with name and address to: **R. BERRY**, 5040 Corby St., Omaha 4, Nebraska.

**RADIANT ULTRA VIOLET PRODUCTS**, Cambria Heights, New York. Manufacturers of "Radiant" Blacklight units of outstanding performance, from \$14.50. Brochures free.

**GEM MATERIAL** shipped prepaid, 100 lbs., \$16.50. Agate, Palm wood, and Jasper. **MORTON MINERALS & MINING**, 21423 West Highway 66, R.F.D. 1, Barstow, California.

**REOPENED! BOISE GEM SHOP.** New location is 4057 Highway No. 20, Boise, Idaho. Now one of the finest Rock Shops in the Northwest. No longer located on Highway No. 44, Boise. Address correspondence, orders, etc. to the New address. Choice slab "approvals" on request. Excellent assorted "rough," 5 pounds **postpaid**, \$3.50. Quality cutting woods, 10 pounds **postpaid**, \$6.00. Write about anything else. Visitors or correspondence welcome anytime. Owned, operated and managed exclusively by original owners, Bert and Pat Cole.

**ASSAYS.** Complete, accurate, guaranteed. Highest quality spectrographic analysis for minerals, metals, and rare earths. Only \$5.00 per sample. **REED ENGINEERING**, 620 S. Inglewood Ave., Inglewood 1, Calif.

**FACETED STONES,** cabachons, carved stones, etc. Drop us a post card for free price list. **R. BERRY & CO.**, 5040 Corby St., Omaha 4, Nebraska.

**STAR RUBIES.** Fine gem quality, rough stones of large sizes. Every stone selected for color and strong silk. Fifty carat parcel, \$9.00; guaranteed and postpaid. **MINERALS & GEMS**, Box 8072, Albany, New York.

**THE BOOK OF MINERAL PHOTOGRAPHS**, 118 pages, octavo, over one hundred pages of excellent illustrations of fine minerals and rocks with descriptions. Indexed. \$1.68 postpaid. **B. M. SHAUB**, 159 Elm Street, Northampton, Mass.

**BE FIRST TO OWN AND SHOW NEW GORGEOUS FLUORESCING WOOD.** Read my advertisement on page 91. **HARVEY R. SHULL**, 1516 South Market, Oskaloosa, Iowa.

**GEM MATERIAL** shipped prepaid, 100 lbs., \$16.50. Agate, Palm wood, and Jasper. **MORTON MINERALS & MINING**, 21423 West Highway 66, R.F.D. 1, Barstow, California.

**GEM CUTTING**, the standard book for the beginner. Accepted and studied wherever people read English and are interested in gems. 248 pages, 135 illustrations. \$4.50. **WILLEMS**, Box 1515, Chicago 90.

**BRAZILIAN QUARTZ** Crystal for faceting. Optically clear. One side faced. Excellent material. 8 pounds for \$6.95, postpaid. **R. BERRY**, 5040 Corby St., Omaha 4, Nebraska.

**PILLSBURY ONYX:** beautiful banded material; dark grey to creamy white; nice slabbing and polishing material. Makes beautiful lamps, book-ends, and spheres; wonderful for preforms for tumbling. Fifty cents per lb., up to 5 lbs. 30c per lb. from 5 to 100 lbs. Can furnish large chunks. **MEHNKE'S**, P. O. Box 1, Cobb, Calif.

**MINERAL SPECIMENS:** Turquoise, \$1.00; Chrysocolla, 2 ins., \$1.00; Howlite, 5 ins., \$1.00; Jaspers - red or yellow, 4 ins., \$1.00; Obsidians, 5 ins., \$1.00; Buddstone, 4 ins., \$1.00; Fire agate \$0.50 to \$2.00; Agate slabs, 10 varieties, 5 ins., \$1.00; Geodes, \$0.35 each.

**\*SPECIALS\***

Slab of each, plus 1 oz. Turquoise and 1 Fire agate, \$5.00; 1 oz. Turquoise, 1 Fire agate, 15 ins. of 5 varieties agate slabs, \$2.50. 8 ozs. mine-run Turquoise, \$5.00. Findings, Supplies, Custom slabbing, Drilling, Tumbling supplies. Add tax and postage. **NO COD'S.** **JOHN V. KAISER**, 1338 Oakdale Ave., El Cajon, California.

FIRST TO OFFER NEW FLUORESCING WOOD in spectacular, glittering colors. Read my advertisement on page 21. HARVEY R. SHULL, 1516 South Market, Oskaloosa, Iowa.

BEFORE YOU BUY any lapidary equipment, send a post card for our new price lists on all types of lapidary equipment and supplies. See how we can save you freight costs, etc. R. B. BERRY & Co., 5040 Corby St., Omaha 4, Nebraska.

"ADVENTURE IN JADE, the fascinating book by the late Mr. Kraft is available (while they last), \$4.85, postpaid. WILLEMS, Box 1515, Chicago 90, Illinois.

QUARTZ CRYSTALS. Unusual specimens from several localities. Odd twinning and other features. Reasonable prices. On approval. CLAUDE H. SMITH, Box 291, Geneva, New York.

MINNESOTA SOAPSTONE. large sample, 50c; 1 lb. chunk, \$1.00. Mille Lac Lake agates, nice sample rock, 50c; 1 lb. \$2.00, postpaid. ROSE OLSON'S HILLTOP HOUSE, Star Route, Isle, Minn.

SALT LAKE CITY, UTAH. Drop in when out this way. We have specialized in Equipment, Findings, Supplies, etc. for Rockhounds since 1950. You may pick up your Free copy of Utah locations, or send a stamped envelope. However, would rather be blessed with a visit. No Catalog. KEN STEWART'S GEM SHOP, 136 West South Temple, (1/2 block west of Temple Square).

SPECTROSCOPE and illustrated, cloth instruction book (220 pages) for ore and rock analysis, \$7.00. CUTTING SCIENCE CO., 26278 Arastradero Road, Los Altos, California.

WYOMING ROCKS. JADE, mostly black and olive green, Eden Valley wood, turritella, algae, and Sweetwater agates. Write for prices. GUS STEVENS, 624 Dewar Dr., Rock Springs, Wyo.

TUMBLING MATERIAL VARIETY; SEMI-PRECIOUS STONES, ROUGH. Crystals; minerals; Rock novelties. Welcome All! HOUSE OF CRYSTALS ROCK SHOP, Rt. 1, Box 283-A, Hot Springs, Ark., Hwy. 7 South, 12 miles.

**COMPARISON MINERAL SPECIMENS**

64 Different 1 in. Specimens only \$6.00 postpaid  
Send for FREE details on above offer. Plus 64 other 1 in. Specimens, all available at 10 for \$1.  
California customers add 4% sales tax.

**MINERALS UNLIMITED**

1724 University Avenue, Dept. E.  
Berkeley 3, California

**Agatized, Opalized, and Jasperized  
WOODS  
Agates, Jaspers, and other Eastern  
MONTANA ROCKS**

Write for prices — Send \$5.00 for a six pound sample-package, postpaid.

**LOST CABIN TRADING POST  
Wibaux, Montana.**

**ALASKA PETRIFIED SEQUOIA**

Black with white dots and gold inclusions  
you can see without a glass  
\$2.00 a slab (1/4" thick)

Airmailed  
Approximately 3 square inches  
ALASKA LAPIDARY SERVICE  
Baranof, Alaska

**AMERICAN GEM & MINERAL**

Suppliers Association



*Not to sell  
but to serve.*

Mail: 1725 N Street, N.W., Washington, D. C.

For an unfailing supply of cutting material and equipment, depend on a FULL TIME Lapidary Shop. Open daily except Tuesday and Sunday morning.

**THE RILEY ROCK SHOP**

R. D. 2, Dalton Rd. Springfield, Ohio  
Phone: WO 4-1460

**ROCKS AND MINERALS**

(A Magazine for Collectors)

If you collect rocks, minerals, sands, pebbles, crystals, ores, gems, ROCKS and MINERALS is your magazine. Founded 1925. Issued once every two months, 112 pages per issue. \$3.00 a year (sample copy 60c.)

**ROCKS and MINERALS**

Box 29 — Dept. ES Peekskill, N. Y.

**TOM ROBERTS ROCK SHOP**

1006 South Michigan Avenue  
Chicago 5, Illinois  
Wabash 2-7085

Change In Hours:

Monday through Saturday  
10:00 A. M. to 5:30 P. M.



## Earth Science Visits Some Rock Shops

by EARL D. CORNWELL

### II

The Black Hills region might be expected to boast a number of rock shops. There are two Jones Agate Shops in Keystone, S. D., and one in Rapid City. As thereby indicated, Mr. Jones is a busy man. In Keystone we intercepted him on a garbage carry-out walk which led us past one of his Indian friends in full Sioux regalia. Chief Hawkeye recognized our lowly tourist status and proposed that Mr. J. let his customers carry the packages. Chores accomplished, we chinned fraternally about the rock business in general while we admired his polished agates and a magnificent pink quartz pendant which reflected a perfect star.

Advertising by word of mouth is singularly effective. The manager of the El Rancho Motel in Twin Falls, Idaho, who has picked up some nice specimens himself in Mexico as well as his own locale, told us about Earl Phillips' Pioneer Museum in Tuscarora, Nevada. We missed meeting Earl but his son was a most courteous host. We loosened the purse strings to the extent of buying a piece of myrikite with streaks of red cinnabar, some opalite, and a complex copper ore (burnite). A tour through the basement workshop indicated that Earl is an ingenious craftsman. To polish some cut surfaces he had set up an angle-iron framework from the four corners of which was suspended, by springs, a shallow square pan containing an abrasive slurry. A slightly bent, verticle shaft was connected to a bearing on the under side of the pan. The eccentric motion resulting when the shaft was rotated produced a slight horizontal vibration of the pan and an effective polishing action. Earl lets a nearby stream do his tumbling for him. He mounts a tumbling barrel on an axis and adjusts its position in the

stream bed until the flow of the water provides the correct number of revolutions per minute. A barrel of half-polished material in the basement was mute evidence that Old Debbil Drought thwarted Earl this year. The stream had all but dried up!

Besides the shops that have been established for some time (we understand Earl Phillips inherited some of his collection), EARTH SCIENCE visited some youngsters in the business. Outstanding among these is Hjalmar Johnson, of Wibaux, Montana. Look for the sign "Lost Cabin Trading Post" on Main Street. If you are looking for some choice pieces of petrified wood and want an extensive collection from which to choose, Hjalmar's your man. At sixty, more or less, he's given up ranching and about a year ago recruited a hunting team with younger legs to bring in material. Besides wood, some agatized and some apparently opalized, he has large pieces of pure chalcidony and a collection of fossilized clams. We prize a "cannon-ball" that he gave us. These concretions are rare in our parts.

We are indebted to another newcomer, Henry Yust, for a marine fossil, the center portion of an ammonite. Henry has whole specimens up to 3 ft. in diameter and a nice collection of minerals and petrified wood from the area west of Rocky Mountain National Park. His brand new shop is adjacent to Kremmling Motors at Kremmling, Colorado, where he serviced cars for a good many years. We hope Henry found the turritella agate beds south of Wamsutter, Wyoming, to which we directed him. Nearly everyone seems to have been at Wamsutter at one time or another and to have found his turritella on the top of a

different mesa. No wonder the antetelopes are getting tame! We stopped to see Meg Gleason's agates at the gas station just before we turned off Highway 30. Meg had just left on a hunting trip. Remembering Eden Valley, we bought one of her handsome slabs and haven't regretted it even though we were to pluck some raw stuff straight from the Cretaceous Period a few hours later.

At the short end of the age scale is a young man of perhaps 10 or 11 who tends the J. L. Washburn shop in Grantsville, Utah, while Dad is out hunting. Obsidian is prominent in the Washburn collection; there are many varieties including some fine snowflake. Thunder eggs, septarian nodules, and wonderstone or picture jasper are noteworthy also. We held a small conference over what the young man called "petrified walnuts". "Barium?" we asked. "No, you find them lying on top of the ground," he replied earnestly. Forgive us the little joke, Junior. Man-to-man, we congratulate you on your knowledge of minerals. We predict your future will not be a dull one.

We close this brief account of our visits with mention of a lady whose fame had traveled to Chicago before we set out. Although Edith Ritchie, of Gardiner, Montana, does not operate a rock shop, she may rent you a small apartment if you are lucky. For with the apartment is included some valuable tips on where to look for minerals and fossils. If you are *very* lucky, she may accompany you. Buffalo Jump has been pretty well sieved, but just that day she had found a perfect arrowhead there for one of her tourists. When we called she was preparing to leave at 10 that evening for a few days' agate hunt with a friend. Edith has fished all the streams around Yellowstone. Her father had been one of the first white men to survey the Park. She knows the Bailey ranch where Mr. Bailey, with an assist from a badger, found a cache of Indian obsidian money. She knows Tom

## PARADISE GEMS

NORTHERN CALIFORNIA GEM  
MATERIALS

We specialize in materials from Northern California and adjacent areas, obtaining a large part of them ourselves. This enables us to offer you the best in quality and value.

Modoc Obsidian Trinity Rhodonite  
Siskiyou "Jade" Siskiyou Quartz  
Pulga "Jade" Pacific Jasper  
Feather River "Jade"  
Carnelian Agate  
Sawmill Peak Crystals  
Opalized Limb Sections

Mail order—Retail sales on premises by appointment only.

Satisfaction is always guaranteed. Price list sent promptly upon request. Wholesale to bona fide dealers.

## PARADISE GEMS

5676 Paragalia Way Paradise Calif.  
Phone: Trinity 7-3462

## Mexican Thumbnails

Suite of 10 uncommon minerals,  
all nice groups \$3.50  
Set of 20 in compartmented box,  
all nice groups or single xls. \$7.50  
(No junk or common ones in above)



THE  
PROSPECTORS  
SHOP

201 W. San Francisco

Santa Fe, N. M.

## NORTHWEST MINERAL NEWS

*The Gemstone Magazine*

Official Publication of the Northwest Federation  
of Mineralogical Societies

BY—FOR—ABOUT ROCKHOUNDS  
MINERALS, ROCKS, GEMS  
FIELD TRIPS, INDIAN ARTIFACTS

Subscription \$1.00 a year in U. S., Possessions  
and Canada. Elsewhere \$2.00.

Northwest Mineral News

5606 Mount Tacoma Drive, S.W.  
Tacoma, Washington

Miner Basin and Yankee Jim Canyon and has samples of their fabulous minerals. A set of sinister rattles lies among her rocks. This is the first summer in quite awhile Edith hasn't been called on to kill a rattlesnake. "I always carry a broom handle for that", she said. She's out of bear oil right now. A bear has been snooping around the gardens on the edge of town recently. She has a friend on the Gardiner police force and as soon as they get Mr. Bruin, he'll see that Edith replenishes her supply of oil. It keeps her feet supple. That helps when you're crawling along ledges or clambering over rock piles. Edith won't be 75 until her next birthday.

#### JUNIOR ESSAY CONTEST

Rules for the 1958 American Federation Junior Essay Contest have been announced as follows:

1. Any boy or girl, 16 years of age or under as of May 1, 1958, is eligible to compete.

2. Each essay shall be entirely the work of the person entering same.

3. The subject of the essay shall be; "Why I Should Be a Member of a Mineral and or Gem Society", and shall be of not more than 2,000 words.

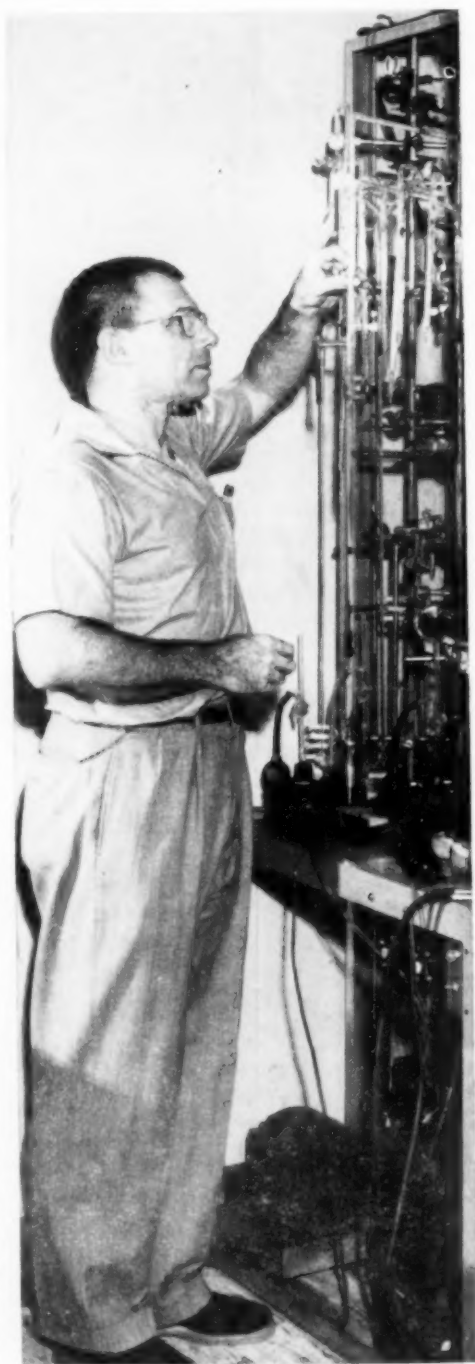
4. PRIZES will be awarded at the 1958 convention of the American Federation, at Dallas, Texas, May 1st through 4th, and will be a \$50. U. S. Savings bond for 1st place and a \$25. bond for 2nd place.

5. Deadline for mailing entries will be midnight, March 31st, 1958.

6. All entries are to be addressed: Henry B. Graves, Contest Chm., 3153 N.W. 27th Street, Miami 42, Florida.

DAVID C. HESS of the Argonne National Laboratory, Lemont, Illinois, prepares to admit a sample of argon gas to be analyzed with a mass spectrometer. With this instrument, atoms of the gas are ionized (positively charged). The ionized atoms (called ions) are then accelerated by application of high voltage. The ions of three isotopes of argon, A-36, A-38, and A-40, move in paths of slightly different radii and so can be separately collected and measured. This

is in the procedure of measuring the life of the Kansas and Nebraska meteorites. (See next issue.)



—Photo Argonne Laboratory

## Don's Opal & Gem House

Australian Fire Opal Cabochons.

Standard sizes, 8x10, 10x12 mm etc. per Carat, \$1.50 to \$3.00. Memo Selections to pick from against your deposit. Courtesy to Dealers and Mounters.

### SMOKY TOPAZ AND ROCK CRYSTAL QUARTZ GEMS

12mm Smoky Topaz facet, drill hearts, pr \$3.95  
 12mm Rock Crystal facet, drilled hearts, pr 1.95  
 12x10mm Emerald or oval smoky topaz ea 1.00  
 10x20mm Emerald or oval smoky topaz ea 2.00  
 10x20mm Emerald or oval smoky topaz ea 3.00  
 Crystal Pagoda, earring stones 18mm, pr 1.75  
 Crystal Pagoda, Pendant Stone, 28mm, ea 1.65  
 5 point Crystal Star, 16mm earring stone pr .90  
 5 pt. Crystal Star, 28mm Pendant Stone ea 1.00  
 S/S Bails for Pendent stones with loop ea .30  
 S/S Bails for earring stones, per pair .36

New price listings on zircons, peridots, opals, scarabs, intaglios, hearts, stars, large crystal stones, etc. Plus a 10x12mm Faceted Smoky Topaz, a 3mm Faceted Peridot and a 4mm Faceted Brilliant Zircon. All postpaid, \$1.50. Price listings without Special sent only to those furnishing self addressed, stamped envelope.

Every purchase guaranteed to please or money back. Add 10% Federal Excise Tax to all Gem Stone Offers. All \$3.00 or more orders will be postpaid.

**DON L. JACKSON**

4083 Highland Ave., Miami, Ariz. Ph. GR 3-2167

## Selected Cutting Materials

Now you can have the finest selected cutting material for those special cabochons and faceted gems. Fine cut stones and superb specimens.

Superior grade, rough Star Ruby 50c., \$10.00  
 Cut black Star Sapphires, nice star, per ct. 1.75  
 Rhodochrosite slabs, per sq. inch .75  
 Slabbed Star Quartz, per sq. inch .75  
 Catseye obsidian, 5 ozs., 1.00  
 Blue lolite, per half oz., 2.00  
 Emerald (Chatham), \$1, \$2, \$3, and up  
 Phantom amethyst, 4 ounces 1.00  
 Bloodstone select, per oz. .50  
 Citrine faceting, per gram, 20c to 35c  
 Amethyst faceting, per gram, 40c to \$2.00  
 Aquamarine, Fine, per gram, 2.00

Many, many others. List for 3c stamp.

**BOOKS \* LAPIDARY EQUIPMENT  
 FRANTOM \* SAPPHIRE \* STONEMASTER  
 DIAMOND COMPOUNDS**

See you at the  
**Midwest Convention Booth 4**

**Jack V. Schuller**

TALcot 3-7691

P.O. Box 28 Park Ridge 12, Illinois

## OPAL SLIDES—OPAL CABOCHONS



Send \$1.00 for 3 full slides of opal cabochons, and list of opals. Then order just the opal you like from this large list.

White Opals      Semi Black Opals  
 Fire Opals      Black Opal Doublets  
 Jelly Opals

**J. DANIEL WILLEMS**

Lock Box 1515

Chicago 90

## BACK ISSUES OF

## EARTH SCIENCE

We are overstocked on a number of back issues and need badly the space for our current files. Many of these surplus copies are of the very best published.

There are 30 different issues to select from, BUT

**WE WILL MAKE OUR OWN SELECTION**

Five issues, \$1. (plus 8c postage)  
 Twelve, \$2. (plus 16c postage)  
 As long as they last—first come, first served.

**EARTH SCIENCE**

BOX 1357, CHICAGO 90

## Midwest Club News

BERNICE REXIN, *Club Editor*  
3934 North Sherman Blvd.  
Milwaukee 16, Wisconsin

DES MOINES LAPIDARY SOCIETY recently purchased the fixtures and miscellaneous supplies of a jewelry store (seven truck and two station wagon loads). The club reserved the show cases for its own use and auctioned off the remaining material to its members. The auction required two week-ends and netted the society a profit of \$400 in addition to the show cases. The group intends to have these cases well filled when it holds its Rock-hound Roundup on October 18-19.

CINCINNATI MINERAL SOCIETY on January 29 enjoyed hearing Professor C. Rajagopalan, of Alagappa College, Madras University, India, speak on "The Geology of India and Its Semi-precious Minerals." He illustrated his presentation with maps and color slides. Professor Rajagopalan is an outstanding and experienced teacher who is presently taking graduate work in geology and geography at the University of Cincinnati.

Future programs scheduled for CMS are: "Synthetic Gems", by Mr. and Mrs. William Hugel on April 30; "Mining Mexican Minerals, by Fred Hauck on May 28, and "Famous Mineral Deposits of Spain", by Professor Richard Durrell on June 25. Visitors are invited.

MINERALOGIST SOCIETY OF JOLIET recently heard Dr. Wilbur Hoff, Director of Research for Western Electric company, speak on "Geology as a Hobby." Dr. Hoff illustrated his talk with a number of mineral specimens from his own collection, which is one of the finest in the country.

MICHIGAN MINERALOGICAL SOCIETY on February 10, via colored slides, was taken on an extended field trip with John and Lillian Mibelcic to Nova Scotia and Newfoundland. They visited the areas where agate, amethyst, satin spar, chabazite, analcite, stilbite and natrolite are found. They saw the tremendous tides of the Minas Basin and learned how they affected collecting. Interest in the slides was heightened by the fact that members had previously viewed exhibits of minerals that the Mibelcics had brought back from these maritime provinces.

CHICAGO ROCKS AND MINERALS SOCIETY celebrated its twelfth birthday on February 8. After viewing the movie, "Our Mr. Sun," members and guests were served cake and coffee.

MIAMI VALLEY MINERAL AND GEM CLUB is now officially incorporated as a non-profit organization in the State of Ohio. The advantages of incorporation are that if a corporation is sued, the corporation is liable for damages but no individual member is liable, unless he personally contracted for services or if an accident was caused through his individual negligence. If an unincorporated club can not satisfy a judgement against it then each individual member may be sued. Then, if judgement is recovered, each one of the individuals who has been sued will have to pay said judgement. Each state has its own requirements for incorporation, but the cost for a non-profit organization is usually less than \$50.

MARQUETTE GEOLOGIST ASSOCIATION on March 1, heard Dr. Otto speak on "Geology". MGA meets on the first Saturday of each month in the Chicago Academy of Sciences. Visitors are cordially invited.

EARTH SCIENCE CLUB OF NORTHERN ILLINOIS on March 14 was presented two color-illustrated travelogues: "Exploring Arizona's Agatized Rainbows" and "Alaska. Land of Contrasts and Possibilities." George Gelakoski, who recently returned from a six-week revisit to Arizona, through the medium of colored slides took the group on tours through the Painted Desert, the Petrified Forest, Barrington Meteor Crater and many other famous Western areas.

Howard Knight, President of the Midwest Federation and of ESCONL, showed and commented on colored movies of his trip through Alaska where he visited Anchorage, Glacier, Kotzelue above the Arctic Circle, Nome and many other points. Long sunsets, huge glaciers, the abundance of wild life, gold mining, Eskimo skills and folkways, the museums of Alaska, and Alaska's climate all contributed to his interesting presentation.



## ATTENTION ROCKHOUNDS

Why not acquire some authentic information as a basis for more complete knowledge of the many phases of Rock and Mineral Identification through a HOME STUDY COURSE?

Excellent text, collection of Rocks and Minerals, and personal guidance and consultation with each course.

### MINERAL SCIENCE INSTITUTE

Desk 5

159 East Ontario St.,

Chicago 11, Ill.

Gentlemen: Please send me free copy of your brochure on "Mineral Identification"

Name .....

Street & No. ....

City & State .....

## CENTRAL OREGON

### PLUME & MOSS AGATE

Choice slabs of red and red and black, \$.75 sq. in. Moss agate, red; red and golden, \$.35-.50 sq. in. All vein moss types and colors—\$1.00 per lb. in the rough.

### GLASS BUTTES OBSIDIAN

**NEW! "MARCHET BANDS"**  
red ribbons in black obsidian - 12 sq. in. \$5.00.  
25 sq. in. \$10.00. A MUST.

All year special—7 beautiful types of colorful banded, spotted, and multiple flow-in-one including the vari-colored fruitcake type — 7 pounds postpaid \$5.00. All obsidian types in chunks for spheres up to 2" dia.—75c per lb., except iridescent. Iridescent or rainbow obsidian, very finest flawless—\$1.00 per pound. Silver sheen; golden sheen—\$.50 lb.

—Postage required on rough material unless otherwise specified.

Come and see us.

### CHET & MARGE SPRINGER

862 Roosevelt Ave.

(South of town) Bend, Oregon

## Looking for Unusual Specimens ?

Death Valley Onyx, Death Valley, Calif. Deep yellow with brown & red; choice 40c lb.

Oolite, Death Valley, Calif., black egg-shaped dots in light colored matrix; takes a very high polish . . . 30c lb.

Dolomite, pink with green chloride (marble), from Panamint Mts., Calif. . . 25c lb.

Inderite-boron, Kern Co., Calif. Glassy crystalline mass, some with clay inclusions; a new mineral, rare. 3x3 to 5x8 and a few museum specimens . . \$3.00 - \$15.00

Ulexite-Boron, Kern Co. Rare. \$1.50 lb.  
Takes an excellent dye.

Minimum order - \$15.00 F.O.B.

DEALERS INQUIRIES WELCOME.

## SEARLES VALLEY ROCK SHOP

P. O. Box 405

Argus, Calif.

WISCONSIN GEOLOGICAL SOCIETY learned many interesting facts about jade on February 10 when a member, Phil Wiegand, told about its occurrences and characteristics, and gave tips on how to cut and polish it. Jade is found in many colors but never in blue. In the United States jade has been found in tremendous quantities around Landers, Wyoming. Most of this jade has now been collected. Alaska is now a good source of jade. Mr. Wiegand cautioned jade buyers that cheaper grades of jade are now being artificially colored an emerald green (almost too green) but the coloring, though quite permanent, does not penetrate deeply.

ST. LOUIS GEM AND MINERAL SOCIETY held a hobby show on March 10. Members were encouraged to exhibit anything they collected in addition to gems, minerals and fossils. The show pointed up the fact that often another hobby has led rockhounds to gem and mineral collecting or vice versa.

CENTRAL ILLINOIS ROCKHOUNDS held its Sixth Annual Exhibit on March 22-23. A beautiful array of gemstones, jewelry, mineral specimens, Indian relics, and sea shells filled the show cases. Lapidary equipment was also shown.

The one-page bulletin of CIR, written each month by its president, George M. Davis, is an inspiring example how well a club's activities can be reported on a single sheet of stationery. President Davis uses this brief space to keep the members informed about both local and national rockhound activities, publishes interesting news about its members, and still manages to occasionally review new pamphlets and books on subjects of interest to rockhounds. The conciseness of his reports adds to their readability.

INDIANA GEOLOGY AND GEM SOCIETY'S guest speaker on March 14 was Dr. William J. Wayne, head of the Glacial Geology Section, Indiana Geological Survey. Dr. Wayne spoke on the "Geology of Southampton Island" (North of Hudson Bay), where last summer, as a member of a large scientific expedition, he studied the limestones of the Silurian and Ordovician Periods. He displayed fossils that he had collected from five different places on the island.

KALAMAZOO GEOLOGICAL AND MINERAL SOCIETY recently heard Dr. Berry, of

Western University, talk on "Fossils". Dr. Berry divided fossils into three categories: sea fossils, land plant fossils, and land animal fossils. The most common marine fossils are coral brachiopods and they are found in abundance near Cincinnati, Ohio, and Nashville, Tennessee. The most famous land plant fossils are found in the coal beds near Joliet, Illinois. Both Connecticut and Texas are well known for fossil footprints, a type of land animal fossil. Some of the finest fish fossils have come from Fossil, Wyoming.

MADISON GEOLOGICAL SOCIETY on February 3 heard Professor Lewis Cline speak on "Streams—Designers of Scenery". The talk was beautifully illustrated with colored slides of mountain streams and plains rivers. Professor Cline told how glaciers had caused streams to take new courses and how the flowing water changed the landscape by carrying rocks and soil with it and dropping them when its force subsided. During the early history of the United States, rivers were the main highways and towns sprang up beside them. Today they still play an important role in transportation.

## GEM TUMBLING

and

Baroque Jewelry Making  
by the Victors

NEW SECOND EDITION  
Just off the press

Authors' own methods described in detail in 48 pages of very common sense English.

Includes information on - How to build a tumbler - Proper belt lengths and pulley sizes - Recommended speeds and grits for each type of Gem.

A MUST FOR EVERY TUMBLER  
(Experienced as well as beginners)

\$2.00 — Postpaid

Anywhere in U. S. or Canada.  
Washington residents add 7c Sales Tax

Obtain from your local Supply house,  
your dealer, or order from

**VICTOR AGATE SHOP**

1709 South Cedar St. Spokane 41, Wash.

## GEMS AND MINERALS

The Rockhound's Own Magazine

is a national magazine for the amateur **GEM CUTTER, MINERAL COLLECTOR, SILVERSMITH, GEOLOGIST, and ROCKHOUND.**

Each MONTHLY issue is chock full of interesting and helpful information on field trips, gem cutting, gems, minerals, "how-to-do-it" features, hints, tips, pictures, club and show news, and advertisements all aimed especially at helping the rockhound get more from his hobby.

**GEMS AND MINERALS** is owned by the California Federation of Mineralogical Societies, a federation of over 75 rockhound clubs. It is the **OFFICIAL MAGAZINE** of both the California and American Federation of Mineralogical Societies.

Published EVERY Month  
One Year (12 issues) ONLY  
**\$3.00**

or write for free brochure

**GEMS AND MINERALS**

P. O. Box 687

Mentone, Calif.

### MIDWEST GEM TRAILS JUST OFF THE PRESS

This is the book you have been waiting for. A field guide for the gem hunter, the mineral collector, and prospector. Hundreds of localities are described and illustrated by June Culp Zeitner of Mission, South Dakota - - - The author has visited most of the localities described.

12 STATES COVERED

Including South Dakota, Minnesota, Michigan, Wisconsin, Illinois, Iowa, Kansas, Nebraska, North Dakota, Indiana, Ohio and Missouri - - - The first specialized guide book especially for the Midwest region.

Midwest Gem Trails -- Price \$2.00  
OFFICE SPECIALTIES

2364 No. 58th Street Seattle 3, Wash.

### Exquisite Specimen Agates

Polished Whole Louisiana C. I. Colored Agates  
These are very lovely cabinet specimens for your collection or a special gift to a rockhound. The first time these very colorful agates have been offered for sale. Selected specimens are \$4.50 each, Postpaid. A very limited number are available. You may return for refund in full if you are not satisfied with your purchase.

Ganoin Ivory, Opalized Palm,  
Florida Agatized Coral.

**KEN KYTE**

520 East Boston Street  
Covington, Louisiana

Box 161



**GEODES** We specialize in crystallized **GEODES** with crystal interiors and mineral inclusions. Specimens in stock up to 125 pounds. **FREE LIST** of Geodes, Minerals, Specimens and Gem Materials on request.

### LAPIDARY EQUIPMENT

We are authorized dealers for **HIGHLAND PARK, HILLQUIST, FRANTOM, STONEMASTER, B.&I., POLY ARBORS.**

**MINERALIGHTS  
AND ULTRA-VIOLET LAMPS.**  
Free list on request.

**MOUNTINGS** We have a complete stock of **MYCO** mountings in **STERLING SILVER** and **10K GOLD**. Order from our large stock. **New 40 Page Mountings and Findings Catalog Now Out.** Send for your free Copy today.

### GEM MATERIALS

New shipment of **AUSTRALIAN OPALS**, fine quality. **PRACTICE OPALS** with good fire at \$4.00 to \$6.00 per oz. **QUALITY OPALS** for the advanced cutters in **WHITE, JELLY,** and new, top-quality **GREYS**, from \$10.00 to \$80.00 per oz. **BLACK OPAL** from Lightning Ridge, for specimens or for cutting doublets, at \$1.00 per piece, postpaid.

**LAPIDARY & GEM CUTTING SUPPLIES & OTHER GEM MATERIALS IN STOCK.**

Don't Delay—Order Today

We welcome visitors, stop in and see us. We're conveniently located on U.S. Highway 34.

**GEODE INDUSTRIES**  
106 W. Main St. New London, Iowa

## ALL UTAH ROCKS

Petrified wood, dinosaur bone, beaver agate, snowflake and mahogany obsidian - - - 50c lb. Septarian nodules, selenite crystals, white onyx, 15c lb. Finest slabbed blue banded agate (some turtle back), dinosaur bone, petrified wood, up to 65 sq. in. per slab, 25c per sq. inch. You pay postage.

**A. L. HUBERT ROCK SHOP**  
Box 97, Hurrlicane, Utah

*Specimens for Mineral Collectors*

*Scott J. Williams*

Catalog 25c

2346 S. Scottsdale Road  
SCOTTSDALE, ARIZONA

Whitney 5-0803



# MIDWEST FEDERATION CONVENTION

Make your plans now  
to attend  
June 19, 20, 21, and 22, 1958

## TWO NEW ITEMS BY POPULAR DEMAND

- 1—Field trip to BRAIDWOOD FOSSIL area,  
Sunday afternoon of the 22nd.
- 2—Exhibits at the Convention will remain  
open from 1 to 6 P.M. the same afternoon.

**Downers Grove, Illinois**  
at  
**Community High School**

Two blocks off US Highway 34  
Six miles North of US 66  
Twenty Miles West of Chicago  
On C. B. & Q. R. R.

**EVERY MIDWEST CLUB  
SHOULD BE REPRESENTED**

NOW IS THE TIME TO START PLANNING  
FOR

INDIVIDUAL EXHIBITS      COMMERCIAL EXHIBITS  
JUNIOR EXHIBITS          SOCIETY EXHIBITS

SEE PAGE 7 FOR FURTHER INFORMATION